

**Listing of Claims:**

Claims 1-20 Canceled

21. (Original) A process which comprises:
- a. selecting a feedstock comprising recoverable amounts of a higher diamondoid component or components selected for recovery, nondiamondoid components and diamondoid components having a boiling point less than the lowest boiling point higher diamondoid component selected for recovery;
  - b. removing from the feedstock a sufficient amount of components having a boiling point less than the lowest boiling point higher diamondoid component selected for recovery under conditions wherein recoverable amounts of the higher diamondoid component or components selected for recovery are retained in the treated feedstock; and
  - c. thermally treating the feedstock recovered in b) above to pyrolyze at least a sufficient amount of nondiamondoid components therefrom to permit recovery of the selected higher diamondoid component or components from the thermally treated feedstock wherein the pyrolysis is conducted under conditions to provide a treated feedstock retaining recoverable amounts of the selected higher diamondoid component or components.
22. (Original) The process of Claim 21 wherein the feedstock additionally comprises nondiamondoid components having a boiling point both below and above the lowest boiling point selected higher diamondoid component, and at least one lower diamondoid component.
23. (Original) A process of Claim 21 additionally comprising the step d) recovering a composition enriched in one or more selected higher diamondoid

components from said treated feedstock formed in b) above with one or more additional separation techniques selected from the group consisting of chromatographic techniques, thermal diffusion techniques, zone refining, progressive recrystallization and size separation techniques.

24. Canceled
25. (Original) A process for recovering at least one selected higher diamondoid comprising selecting a feedstock containing a recoverable amount of the at least one selected higher diamondoid and recovering the at least one selected higher diamondoid from the feedstock by chromatography.
26. (Original) The process of Claim 25 wherein the chromatography is gas chromatography.
27. (Original) The process of Claim 25 wherein the chromatography is high pressure liquid chromatography.
28. (Original) The process of Claim 27 wherein the liquid chromatography comprises chromatography on two liquid chromatography columns in sequence with the two columns having differing selectivities.
29. (Original) The process of Claim 25 having an additional step and comprising selecting a feedstock containing a recoverable amount of the at least one selected higher diamondoid, treating the feedstock to produce a treated feedstock having an increased concentration of the at least one selected higher diamondoid, and recovering the at least one selected higher diamondoid from the treated feedstock by chromatography.
30. (Original) The process of Claim 29 wherein the treating comprises fractionating the feedstock and wherein the treated feedstock comprises a feedstock fraction.

31. (Original) The process of Claim 30 wherein the feedstock fraction is a distillation residue.
32. (Original) The process of Claim 30 wherein the feedstock fraction is an overhead fraction.
33. (Original) The process of Claim 29 wherein the treating comprises pyrolyzing and wherein the treated feedstock is a pyrolyzed feedstock.
34. (Original) The process of Claim 29 wherein the treating comprises fractionating the feedstock to yield a feedstock fraction containing the at least one selected higher diamondoid and pyrolyzing the feedstock fraction and wherein the treated feedstock is the pyrolyzed feedstock fraction.
35. (Original) The process of Claim 34 wherein the feedstock fraction is a distillation residue.
36. (Original) The process of Claim 34 wherein the feedstock fraction is an overhead fraction.
37. (Original) The process of Claim 29 wherein the treating comprises pyrolyzing the feedstock to yield a pyrolyzed feedstock and fractionating the pyrolyzed feedstock to yield a treated feedstock which is a pyrolyzed feedstock fraction containing the at least one selected higher diamondoid.
38. (Original) The process of Claim 29 wherein the treating comprises removing aromatic and polar components by low pressure liquid chromatography.
39. (Original) A process for recovering at least one selected higher diamondoid comprising selecting a feedstock containing a recoverable amount of the at least one selected higher diamondoid in admixture with nondiamondoid

materials, aromatics and polar components, distilling the feedstock to yield an overhead and a bottoms, the bottoms containing the at least one selected higher diamondoid, fractionating the bottoms to yield an overhead fraction containing the selected at least one higher diamondoid in admixture with nondiamondoid materials, aromatics and polar components, pyrolyzing the overhead fraction to reduce the concentration of nondiamondoid materials and to yield a pyrolyzed overhead fraction, treating the pyrolyzed overhead fraction by low pressure liquid chromatography to remove aromatics and polar components and yield a low pressure chromatographed pyrolyzed overhead fraction, and recovering the at least one selected higher diamondoid from the low pressure chromatographed pyrolyzed overhead fraction by final chromatography.

40. (Original) The process of Claim 39 wherein the final chromatography is gas chromatography.
41. (Original) The process of Claim 39 wherein the final chromatography is high pressure liquid chromatography.
42. (Original) The process of Claim 41 wherein the high pressure liquid chromatography comprises chromatography on two liquid chromatography columns in sequence with the two columns having differing selectivities.